

In re Patent Application of:
CHARLES CARPENTER
Serial No. **09/864,918**
Filing Date: **May 24, 2001**

paths from the interior of each cavity to a surface of the array; (d) inserting a SAW die into each of a plurality of the cavities, each SAW die having conductive means electrically contacting the conductive paths within the interior of the corresponding cavity after insertion; (e) sealing a lid in the recess over each inserted SAW die; and then (f) separating the array into individual SAW devices along separation lines between adjacent cavities.

Please replace the paragraph beginning on page three (3), line twentysix (26) of the specification with the following rewritten paragraph:

The present invention also comprises surface acoustic wave devices manufactured according to the methods described above. Those devices are formed from an assembly comprising the unitary array with cavities and recesses as described above, and with a SAW die inserted into each one of a plurality of the cavities in electrical contact with conductive paths extending from the interior of the corresponding cavity to a surface of the array. After the sealing of a lid in each respective recess over the inserted SAW die, the array is separated into individual SAW devices.

Please replace the paragraph beginning on page four (4), line thirty (30) of the specification with the following rewritten paragraph:

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a³ FIG. 2 is a perspective illustration of a typical ball bonding of flip chip surface acoustic wave (SAW) die.

Please replace the paragraph beginning on page six (6), line four (4) of the specification with the following rewritten paragraph:

a⁴ Reference is now made to FIG. 2, which illustrates a typical surface acoustic wave (SAW) die **40** formed in a piezoelectric body **42** having an upper surface **44** onto which are deposited a first set of interdigitated electrodes **46** with associated bond pad **48** and a second set of interdigitated electrodes **50** with associated bond pad **52**. As shown in FIG. 3, during processing, the SAW die **40** is oriented in the cavity **18** with the bond pads **48**, **52** in respective contact with the conductive layers **22**, **24** in a typical "flip-chip" arrangement. It will of course be understood by one skilled in the art from the discussion set out below that the cross-section of FIG. 3 illustrates the assembly after bonding, so as to fix the SAW die **40** in place before the assembly **10** is inverted for separation of individual components and testing.

Please replace the paragraph beginning on page six (6), line fifteen (15) of the specification with the following rewritten paragraph:

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AS Referring again to FIG. 1, after the SAW die 40 is placed in the cavity 18 the lids 60 are then placed over the cavities 18 in the lid alignment recesses 26 and in contact with the overlap area 28. Preferably, this is achieved using automated equipment.

Please replace the paragraph beginning on page six (6), line twentynine (29) of the specification with the following rewritten paragraph:

AG After the reflow step discussed above, means are applied to the bottom surface 16 of the ceramic body 12 to maintain the integrity of the array during separation of individual SAW devices along separation lines 70, 72. In a preferred arrangement, this means comprises a tape 74 applied across the first surface 14 and the top surface 62 of the lids 60. Preferably, the array is "singulated" (i.e., rendered into individual components) via dicing saw or another suitable separation technique along the separation lines 70, 72. Thereafter, the tape 74 is removed to permit further handling of the individual SAW devices 100.

In the Claims:

Please cancel Claims 3-5, 14, and 16-18.

Please amend the following Claims to read as follows: